Space Weather Highlights
05 August - 11 August 2013

SWPC PRF 1980
12 August 2013

Solar activity was at low levels. The week began at very low levels until Region 1818 (S08, L=216 class/area Dao/060 on 11 Aug) produced a C2 at 09/2028 UTC. Activity was at low levels the remainder of the period. The largest event was a C8/Sf at 11/2155 from Region 1817 (S22, L=241 class/area Dao/050 on 11 Aug). Regions 1817 and 1818 continued to show significant growth at the time of this report. Multiple disappearing filaments (DSFs) were observed during the period but none of them resulted in geomagnetic activity.

No proton events were observed at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit was at high levels from 05 - 10 Aug and decreased to normal to moderate levels on 11 Aug.

Geomagnetic field activity was at active to minor storm levels on 05 Aug due to coronal hole high speed stream (CH HSS) effects. Mostly quiet conditions prevailed from 06 - 08 Aug as CH HSS effects subsided. Quiet to unsettled conditions were observed on 09 Aug due to a second CH HSS followed by a return to mostly quiet conditions from 10 - 11 Aug as effects waned.

Space Weather Outlook
12 August - 07 September 2013

Solar activity is expected to be low with a chance for M-class activity from 12 - 22 Aug. The activity is expected mainly from Regions 1817 and 1818 as they continue to develop in spot area and complexity. Activity is expected to be very low to low for the remainder of the period.

No proton events are expected at geosynchronous orbit.

The greater than 2 MeV electron flux at geosynchronous orbit is expected to be at normal to moderate levels on 12 - 15 Aug. An increase to moderate to high levels is expected from 16 - 27 Aug following a series of CH HSS. Normal to moderate levels are expected once again from 28 Aug - 01 Sep followed by an increase to moderate to high levels for the remainder of the period following another series of CH HSS.

Geomagnetic field activity is expected to be at mostly quiet levels on 12 - 14 Aug. An increase to quiet to unsettled levels and a chance for isolated active periods is expected from 15 - 18 Aug due to effects from a recurrent CH HSS. A brief return to quiet levels on 19 - 20 Aug is expected before the arrival of a second recurrent CH HSS. Quiet to unsettled levels with possible active periods are then expected to last from 21 - 23 Aug. Quiet conditions are expected to prevail from 24 - 30 Aug. An increase to quiet to unsettled levels is expected on 31 Aug - 02 Sep and 05 Sep due to effects from two small CH HSS. The period is expected to end at mostly quiet levels.

Daily Solar Data

Date	Radio Flux 10.7cm	Sun spot No.	Sunspot Area (10^{-6} hemi.)	X-ray Background Flux	Flares							
					X-ray			Optical				
					C	M	X	S	1	2	3	4
05 August	104	59	200	B2.0	0	0	0	0	0	0	0	0
06 August	104	61	180	B2.2	0	0	0	1	0	0	0	0
07 August	106	99	190	B2.0	0	0	0	1	0	0	0	0
08 August	104	90	190	B2.2	0	0	0	1	0	0	0	0
09 August	104	51	130	B2.1	1	0	0	1	0	0	0	0
10 August	103	76	110	B2.2	1	0	0	0	0	0	0	0
11 August	110	90	180	B3.3	7	0	0	11	0	0	0	0

Daily Particle Data

Date	Proton Fluence (protons/cm ^{2} -day -sr)			Electron Fluence (electrons/cm^2 -day -sr)		
	>1 MeV	>10 MeV	>100 MeV	>0.6 MeV	>2MeV	>4 MeV
05 August	2.3e+05	9.8e+03	2.3e+03		6.9e+07	
06 August	1.6e+05	1.0e+04	2.6e+03		2.4e+08	
07 August	1.4e+05	9.9e+03	2.6e+03		4.2e+08	
08 August	1.5e+05	1.0e+04	2.4e+03		3.1e+08	
09 August	3.7e+05	1.0e+04	2.5e+03		1.3e+08	
10 August	3.3e+05	9.8e+03	2.4e+03		3.3e+07	
11 August	2.4e+05	1.0e+04	2.6e+03		3.1e+07	

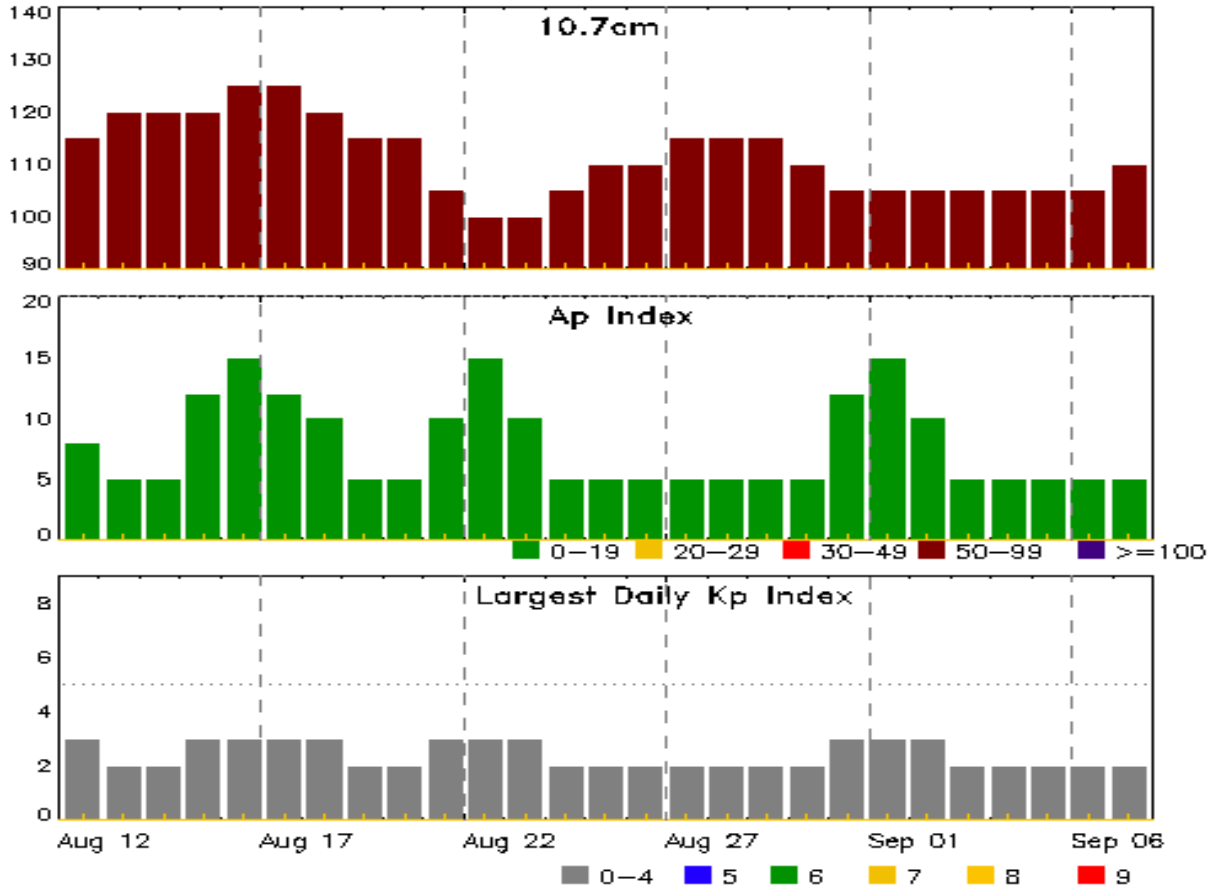
Daily Geomagnetic Data

Date	Middle Latitude Fredericksburg		High Latitude College		Estimated Planetary	
	A	K-indices	A	K-indices	A	K-indices
05 August	11	3-3-3-2-2-3-2-2	22	4-4-5-4-3-2-3-2	16	5-4-3-2-2-2-2-3
06 August	6	2-2-2-1-2-1-2-2	8	1-2-3-2-3-0-2-2	7	2-2-2-1-1-1-2-2
07 August	6	2-1-2-2-3-1-1-1	3	2-1-2-1-0-0-1-0	4	2-1-2-1-1-1-1-1
08 August	4	0-0-1-1-2-1-2-2	3	0-0-2-1-0-0-1-2	5	1-1-1-1-1-1-1-2
09 August	11	1-3-3-2-3-2-3-2	5	0-2-1-3-2-0-2-1	9	1-3-3-2-2-2-2-2
10 August	7	1-2-2-2-3-2-2-1	6	2-1-2-3-3-1-0-0	6	2-2-2-2-2-2-2-1
11 August	7	1-1-1-3-3-1-2-2	5	1-2-1-3-1-1-1-0	6	2-1-1-2-1-2-1-1

Alerts and Warnings Issued

Date & Time of Issue UTC	Type of Alert or Warning	Date & Time of Event UTC
05 Aug 0013	EXTENDED WARNING: Geomagnetic K = 4	04/1620 - 05/1300
05 Aug 0234	WARNING: Geomagnetic K = 5	05/0235 - 0900
05 Aug 0301	ALERT: Geomagnetic K = 5	05/0300
05 Aug 1341	ALERT: Electron 2MeV Integral Flux >= 1000pfu	05/1325
06 Aug 0510	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	05/1325
06 Aug 0812	ALERT: Type II Radio Emission	06/0156
07 Aug 0515	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	05/1325
07 Aug 1955	WATCH: Geomagnetic Storm Category G1 predicted	
08 Aug 0506	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	05/1325
08 Aug 1834	WATCH: Geomagnetic Storm Category G1 predicted	
09 Aug 0505	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	05/1325
10 Aug 1338	CONTINUED ALERT: Electron 2MeV Integral Flux >= 1000pfu	05/1325

Twenty-seven Day Outlook



Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index	Date	Radio Flux 10.7cm	Planetary A Index	Largest Kp Index
12 Aug	115	8	3	26 Aug	110	5	2
13	120	5	2	27	115	5	2
14	120	5	2	28	115	5	2
15	120	12	3	29	115	5	2
16	125	15	3	30	110	5	2
17	125	12	3	31	105	12	3
18	120	10	3	01 Sep	105	15	3
19	115	5	2	02	105	10	3
20	115	5	2	03	105	5	2
21	105	10	3	04	105	5	2
22	100	15	3	05	105	5	2
23	100	10	3	06	105	5	2
24	105	5	2	07	110	5	2
25	110	5	2				

Energetic Events

	Time			X-ray		Optical Information			Peak Radio Flux		Sweep Freq Intensity	
Date	Begin	Max	Half Max	Class	Integ Flux	Imp/ Brtns	Location Lat CMD	Rgn #	245	2695	II	IV

No Events Observed

Flare List

	Time				Optical		
Date	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
05 Aug	1901	1905	1908	B3.6			1810
06 Aug	0142	0152	0204	B4.5			
06 Aug	0633	0644	0655	B6.0			
06 Aug	0804	0804	0808		SF	N15W01	1809
07 Aug	0342	0348	0359	B4.2			1810
07 Aug	1442	1458	1511	B4.8	SF	S25W11	1810
07 Aug	1713	1903	2031	B6.3			
08 Aug	0539	0543	0549		SF	S14W08	1813
08 Aug	1614	1617	1619	B5.5			1813
08 Aug	1756	1924	1932	B4.1			1810
09 Aug	0631	0636	0638		SF	S27W33	1810
09 Aug	0940	0944	0954	B4.5			1818
09 Aug	2013	2028	2043	C2.0			1818
10 Aug	0844	0927	1004	B4.3			1810
10 Aug	1216	1227	1235	B4.6			1817
10 Aug	2345	2352	2357	C1.4			1817
11 Aug	0023	0026	0028	B5.0			
11 Aug	0126	0130	0132	C1.3			1819
11 Aug	0215	0219	0221	B6.6			
11 Aug	0526	0530	0532	C1.1			1817
11 Aug	0606	0612	0622	B7.1			
11 Aug	0638	0640	0647		SF	S02E57	1818
11 Aug	0817	0819	0821		SF	S04E58	1818
11 Aug	0930	0936	0942		SF	S18E33	1817
11 Aug	1226	1231	1234	B7.1	SF	S18E31	1817
11 Aug	1418	1434	1449	C2.0			1817
11 Aug	1509	1515	1517		SF	S02E51	1818
11 Aug	1628	1630	1633		SF	S02E52	1818
11 Aug	1637	1648	1655	C1.2	SF	S19E29	1817
11 Aug	1755	1758	1803	B6.1			1818
11 Aug	1848	1850	1854		SF	S05E52	1818

Flare List

	Time			Optical			
Date	Begin	Max	End	X-ray Class	Imp/ Brtns	Location Lat CMD	Rgn #
11 Aug	1927	1932	2003	C2.1	SF	S20E27	1817
11 Aug	1931	1948	2000		SF	S05E52	1818
11 Aug	2124	2131	2138	C6.7			1817
11 Aug	2126	2155	2234	C8.4	SF	S20E25	1817

Region Summary

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
			Region 1801												
23 Jul	N20E66	86	60	2	Hsx	1	A								
24 Jul	N21E57	83	90	2	Hsx	1	A								
25 Jul	N20E44	83	70	2	Hsx	1	A								
26 Jul	N20E30	84	80	2	Hsx	1	A								
27 Jul	N20E16	85	90	2	Hsx	1	A								
28 Jul	N19E04	84	90	2	Hsx	1	A								
29 Jul	N19W09	83	80	2	Hsx	1	A								
30 Jul	N19W23	83	60	1	Hsx	1	A	1			1				
31 Jul	N19W36	84	60	1	Hsx	1	A								
01 Aug	N20W50	85	60	2	Hsx	1	A								
02 Aug	N20W64	86	60	2	Hsx	1	A								
03 Aug	N19W76	84	60	2	Hsx	1	A								
04 Aug	N21W88	83	60	2	Hsx	1	A								
								1	0	0	1	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 84

			Region 1806												
27 Jul	S16E57	44	10	1	Axx	2	A								
28 Jul	S15E47	41	40	8	Dso	4	B				1				
29 Jul	S15E32	43	80	9	Dso	10	B								
30 Jul	S15E20	40	60	9	Cao	11	B								
31 Jul	S15E09	38	50	7	Dao	7	B								
01 Aug	S15W05	40	30	8	Dao	7	B				1				
02 Aug	S14W19	41	80	8	Dai	12	B				1				
03 Aug	S14W32	40	100	10	Dao	11	B								
04 Aug	S15W46	41	100	8	Dao	7	B								
05 Aug	S14W60	41	40	6	Cao	3	B								
06 Aug	S13W77	45	30	1	Hsx	1	A								
								0	0	0	3	0	0	0	0

Died on Disk.
Absolute heliographic longitude: 40

Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
		Region 1808													
29 Jul	N15E54	21	10	2	Bxo	3	B				1				
30 Jul	N15E41	19	80	5	Dso	6	B				1				
31 Jul	N15E28	20	60	3	Cso	3	B								
01 Aug	N15E14	21	60	2	Hsx	1	A								
02 Aug	N15W00	22	70	2	Hsx	2	A								
03 Aug	N14W12	20	60	3	Cso	6	B								
04 Aug	N14W26	21	60	3	Cso	5	B								
05 Aug	N15W39	21	40	3	Cso	2	B								
06 Aug	N15W54	22	40	1	Hsx	1	A								
07 Aug	N14W67	22	30	1	Hsx	2	A								
08 Aug	N15W80	21	30	1	Hrx	1	A								
								0	0	0	2	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 22

		Region 1809													
30 Jul	N14E79	342	60	4	Hsx	1	A	1							
31 Jul	N12E65	343	120	3	Cso	4	B	1							
01 Aug	N12E52	343	160	5	Dso	3	B				2				
02 Aug	N13E40	342	160	5	Cao	8	B				3				
03 Aug	N13E27	341	110	9	Cao	13	B								
04 Aug	N12E14	341	80	7	Cao	10	B								
05 Aug	N12E02	339	80	9	Cso	9	B								
06 Aug	N13W09	337	60	10	Cso	11	B				1				
07 Aug	N13W21	335	60	15	Cso	10	B								
08 Aug	N11W40	341	30	4	Hsx	3	A								
09 Aug	N11W53	341	30	3	Hax	1	A								
10 Aug	N10W67	342	20	2	Hrx	2	A								
11 Aug	N11W82	344	10	1	Hrx	1	A								
								2	0	0	6	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 339

Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
			Region 1810												
31 Jul	S26E74	334	30	2	Hax	1	A								
01 Aug	S26E59	336	40	2	Hsx	1	A								
02 Aug	S26E45	337	40	2	Hsx	1	A								
03 Aug	S25E32	336	40	2	Hsx	1	A				1				
04 Aug	S26E20	335	30	2	Hsx	2	A								
05 Aug	S26E06	335	40	4	Cso	5	B								
06 Aug	S26W06	334	50	4	Cao	8	B								
07 Aug	S25W19	334	30	5	Cao	8	B				1				
08 Aug	S25W33	335	20	4	Dro	4	B								
09 Aug	S24W48	336	plage								1				
10 Aug	S24W62	338	plage												
11 Aug	S24W76	339	plage												
								0	0	0	3	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 335

			Region 1811												
01 Aug	N06E27	8	10	1	Cro	2	B								
02 Aug	N07E08	10	10	5	Cro	3	B								
03 Aug	N07W01	9	10	1	Axx	1	A								
04 Aug	N07W16	11	plage												
05 Aug	N07W31	13	plage												
06 Aug	N07W46	15	plage												
07 Aug	N07W61	17	plage												
08 Aug	N07W76	18	plage												
								0	0	0	0	0	0	0	0

Died on Disk.
Absolute heliographic longitude: 9

			Region 1813												
07 Aug	S13W06	321	20	3	Cro	5	B								
08 Aug	S13W21	322	40	4	Dao	7	BG				1				
09 Aug	S13W33	321	70	4	Cao	8	B								
10 Aug	S14W47	322	30	5	Cro	8	B								
11 Aug	S14W60	322	20	4	Bxo	5	B								
								0	0	0	1	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 321

Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
			Region 1814												
07 Aug	S27E64	251	30	1	Hsx	1	A								
08 Aug	S26E50	252	40	3	Hsx	1	A								
09 Aug	S26E36	252	20	1	Hax	1	A								
10 Aug	S26E22	253	20	1	Hax	1	A								
11 Aug	S27E09	254	30	1	Hax	1	A								
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 254

			Region 1815												
07 Aug	N06W47	2	10	2	Bxo	2	B								
08 Aug	N07W61	2	20	2	Bxo	3	B								
10 Aug	N08W86	2	plage												
								0	0	0	0	0	0	0	0

Crossed West Limb.
Absolute heliographic longitude: 2

			Region 1816												
07 Aug	S19E62	253	10	1	Axx	1	A								
08 Aug	S20E47	254	10		Hrx	1	A								
09 Aug	S21E33	256	10		Hrx	1	A								
10 Aug	S22E20	255	plage												
11 Aug	S22E07	256	plage												
								0	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 256

			Region 1817												
10 Aug	S22E34	242	10	3	Cro	3	B	1							
11 Aug	S22E22	241	50	7	Dao	12	B	6			5				
								7	0	0	5	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 241

Region Summary - continued

	Location		Sunspot Characteristics					Flares							
		Helio	Area	Extent	Spot	Spot	Mag	X-ray			Optical				
Date	Lat CMD	Lon	10^{-6} hemi.	(helio)	Class	Count	Class	C	M	X	S	1	2	3	4
		Region 1818													
09 Aug	S07E72	217	plage					1							
10 Aug	S07E58	218	20	1	Hrx	1	A								
11 Aug	S08E47	216	60	6	Dao	9	BG				6				
								1	0	0	6	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 216

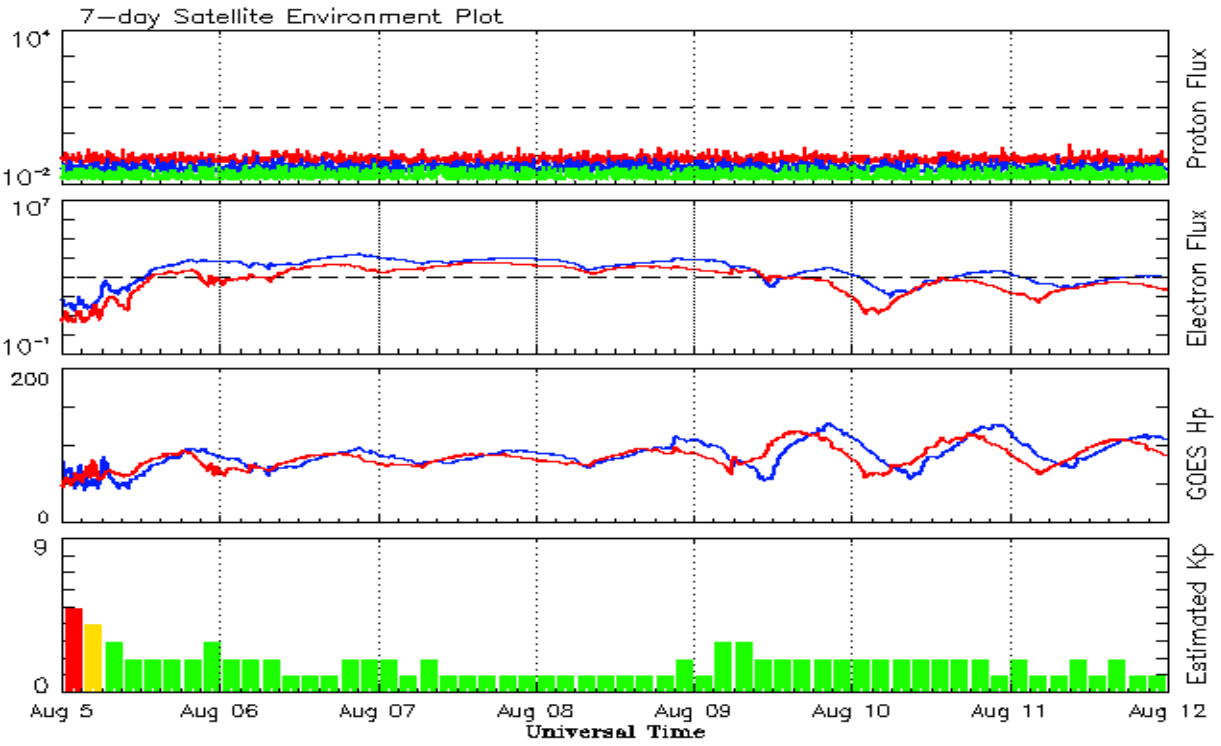
		Region 1819													
10 Aug	S20E49	227	10		Axx	1	A								
11 Aug	S20E37	226	10	3	Bxo	2	B	1							
								1	0	0	0	0	0	0	0

Still on Disk.
Absolute heliographic longitude: 226

Recent Solar Indices (preliminary)
Observed monthly mean values

	Sunspot Numbers					Radio Flux		Geomagnetic	
	Observed values		Ratio	Smooth values		Penticton	Smooth	Planetary	Smooth
Month	SEC	RI	RI/SEC	SEC	RI	10.7 cm	Value	Ap	Value
				2011					
August	66.1	50.6	0.77	84.9	59.0	101.7	117.9	8	7.4
September	106.4	78.0	0.73	84.6	59.5	134.5	118.4	13	7.7
October	116.8	88.0	0.75	84.6	59.9	137.2	118.4	7	8.0
November	133.1	96.7	0.73	86.3	61.1	153.1	119.5	3	8.0
December	106.3	73.0	0.69	89.2	63.4	141.2	121.6	3	8.0
				2012					
January	91.3	58.3	0.64	92.0	65.5	133.1	124.4	6	8.3
February	50.1	32.9	0.66	94.2	66.9	106.7	126.7	7	8.4
March	77.9	64.3	0.82	94.1	66.8	115.1	126.8	14	8.1
April	84.4	55.2	0.65	91.3	64.6	113.1	125.8	9	8.0
May	99.5	69.0	0.69	87.7	61.7	121.5	123.8	8	8.2
June	88.6	64.5	0.73	83.9	58.9	120.5	121.1	10	8.3
July	99.6	66.5	0.67	82.4	57.8	135.6	119.5	13	8.3
August	85.8	63.0	0.74	83.1	58.2	115.7	119.2	7	8.1
September	84.0	61.4	0.73	83.7	58.1	123.2	118.9	8	7.8
October	73.5	53.3	0.73	85.0	58.6	123.3	119.2	9	7.4
November	89.2	61.8	0.69	87.3	59.7	120.9	120.1	6	7.3
December	60.4	40.8	0.68	88.0	59.6	108.4	120.1	3	7.5
				2013					
January	99.8	62.9	0.63	87.1	58.7	127.1	118.9	4	7.5
February	60.0	38.1	0.63			104.4		5	
March	81.0	57.9	0.71			111.2		9	
April	112.8	72.4	0.64			125.0		5	
May	125.5	78.7	0.63			131.3		10	
June	80.1	52.5	0.66			110.2		13	
July	86.1	57.0	0.66			115.6		9	

Note: Values are final except for the most recent 6 months which are considered preliminary. Cycle 24 started in Dec 2008 with an RI=1.7.



Weekly Geosynchronous Satellite Environment Summary
Week Beginning 05 August 2013

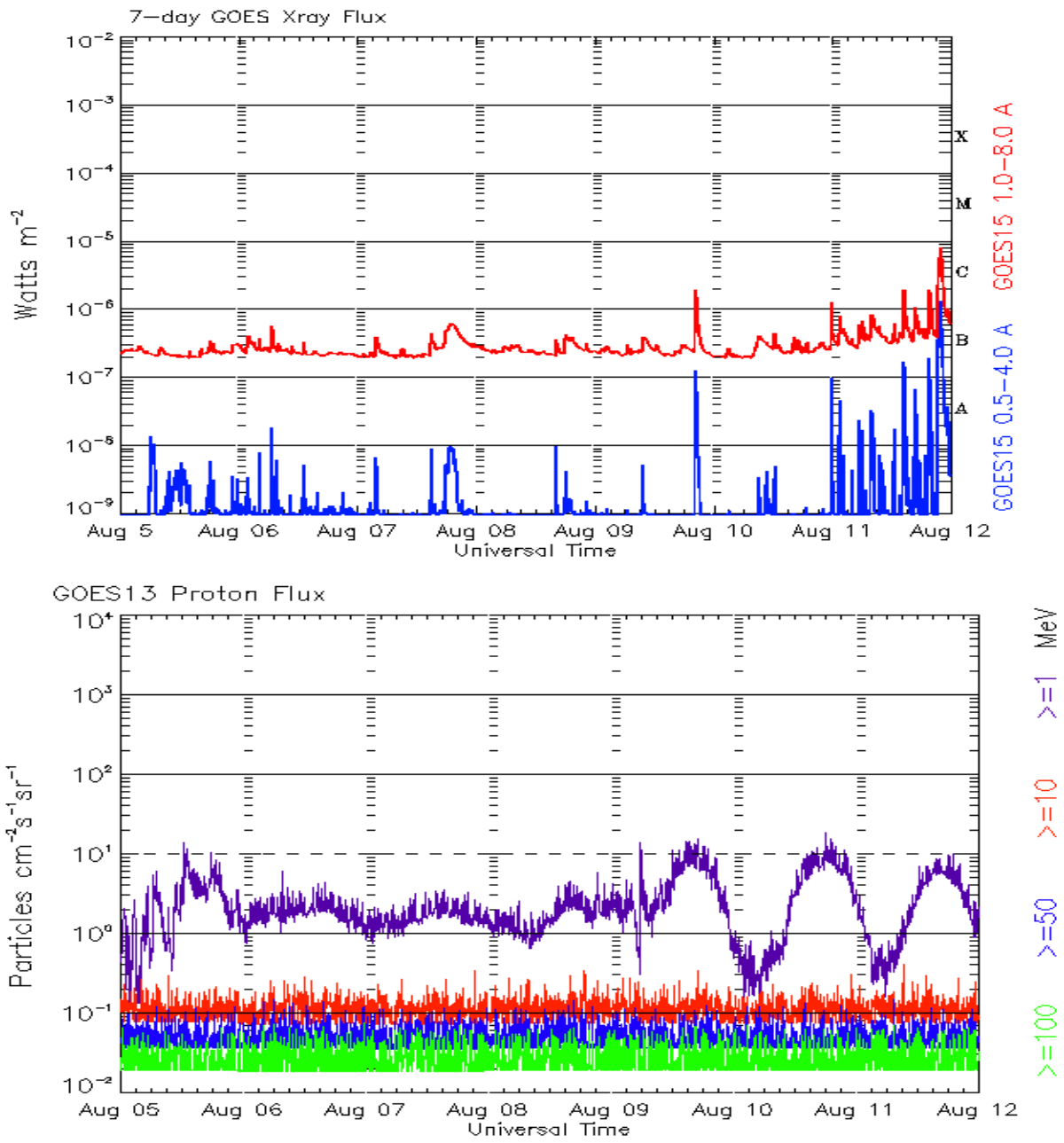
The proton flux plot contains the five-minute averaged integral proton flux (protons/cm^2-sec -sr) as measured by the SWPC Primary GOES satellite, near West 75, for each of three energy thresholds: greater than 10, 50, and 100 MeV.

The electron flux plot contains the five-minute averaged integral electron flux (electrons/cm^2-sec -sr) with energies greater than 2 MeV by the SWPC Primary GOES satellite.

The Hp plot contains the five minute averaged Hp magnetic field component in nanoteslas (nT) as by the SWPC Primary GOES satellite. The Hp component is parallel to the spin axis of the satellite, which is nearly parallel to the Earth's rotation axis.

The Estimated 3-hour Planetary Kp-index is derived at the NOAA Space Weather Prediction Center using data from the following ground-based magnetometers: Boulder, Colorado; Chambon la Foret, France; Fredericksburg, Virginia; Fresno, California; Hartland, UK; Newport, Washington; Sitka, Alaska. These data are made available thanks to the cooperative efforts between SWPC and data providers around the world, which currently includes the U.S. Geological Survey, the British Geological Survey, and the Institut de Physique du Globe de Paris.

The data included here are those now available in real time at the SWPC and are incomplete in that they do not include the full set of parameters and energy ranges known to cause satellite operating anomalies. The proton and electron fluxes and Kp are 'global' parameters that are applicable to a first order approximation over large areas. H parallel is subject to more localized phenomena and the measurements generally are applicable to within a few degrees of longitude of the measuring satellite.



Weekly GOES Satellite X-ray and Proton Plots
Week Beginning 05 August 2013

The x-ray plots contains five-minute averages x-ray flux (Watt/m^2) as measure by the SWPC primary GOES X-ray satellite, usually at West 105 longitude, in two wavelength bands, 0.05 - 0.4 and 0.1 - 0.8 nm. The letters A, B, C, M and X refer to x-ray event levels for the 0.1 - 0.8 nm band.

The proton plot contains the five-minute averaged intergral flux units (pfu = protons/cm^2 -sec -sr) as measured by the primary SWPC GOES Proton satellite for each of the energy thresholds: >1, >10, >30, and >100 MeV. The P10 event threshold is 10 pfu at greater than 10 MeV.

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Notice: The 27-day Outlook, Satellite Environment, X-ray and Proton plots have been redesigned. Comments and suggestions are welcome SWPC.Webmaster@noaa.gov

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